

# NUCLEAR DIVISION NEWS

UNION  
CARBIDE

A Newspaper for Employees of the Nuclear Division, Union Carbide Corporation

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Thursday, July 1, 1971



**DISCUSS INDUSTRIAL COOPERATION** — James V. Murray, vice president of Union Carbide's Chemical and Plastics Operations Division, left, discusses the Nuclear Division's Industrial Cooperation Program with Roger F. Hibbs, president of the division. Melvin E. Koons, right, executive assistant to the president, is coordinator for the program.

## Industrial Cooperation Program Defined Here

James V. Murray, vice president of Union Carbide's Chemical and Plastics Operations Division, recently visited the Oak Ridge Nuclear Division to assist in the

implementation of the Industrial Cooperation program.

The purpose of the program is to transfer to private industry and other interested parties the unclassified technical information and technology derived from the Nuclear Division's work under its contract with the U. S. Atomic Energy Commission.

Specifically, the program is designed to identify and publish promptly new developments and

results of scientific research; provide technical assistance to industry and arrange visits with appropriate staff members; disseminate new technology by conducting seminars, information meetings, and tours for industrial and scientific representatives; and whenever appropriate, make Government-owned facilities, equipment, and personnel available for private purposes and work experience.

Services and equipment are not provided for other if they can be made available reasonably for commercial sources. Although care must be exercised to assure that patent obligations and other matters of concern are handled properly, employees in all four of the Nuclear Division's facilities are urged to submit ideas, or inventions that they feel might be useful in industry. Employees may submit such ideas to their supervisors, the Patent Office, or directly to the plant's Industrial Cooperation representative. Ideas and inventions having industrial application potential will be published in a quarterly review. The review will be mailed to a selected list of industrial firms throughout the country.

Publication of technical information was one of the major activities that stimulated the interest of industrial and research organizations in Nuclear Division programs. During 1970, over 3,100 reports, papers, and journal articles were generated throughout the Division.

Industrial Cooperation representatives in the four Nuclear Division plants are H. Fritz McDuffie, ORNL; George Mitchel, Y-12; William E. Rooks, ORGDP; and Robert Levin, Paducah. Melvin E. Koons, executive assistant to the president of the Nuclear Division coordinates the overall Industrial Cooperation program.

## Medical Insurance Improvements Set At Carbide Plants

Major improvements in hospital room rate allowances and in the surgical schedule have been made for all employees in the Nuclear Division. Salaried employees were informed by letter of the improvements, and agreement has been reached with the various unions concerning the changes.

The maximum daily room rate allowance has been increased to \$40 for employees in Oak Ridge, and to \$36 for employees in Paducah. The increases were based on a study of hospital room rates in both communities. Room rates in the Paducah area are lower than those in Oak Ridge.

In addition, the present \$300 maximum surgical schedule is being replaced by a \$400 maximum surgical schedule. Except for the obstetrical delivery fee, which will remain the same, the maximum fee for most operations has been increased by approximately one-third.

The improvements are effective for hospital admissions and emergency accident care occurring on or after July 1.

## UCC Savings Plan For Ridge, Paducah Totals \$20 Million

A cash distribution of more than \$20 million was made yesterday to employees at four facilities in Oak Ridge and in Paducah, Ky.

The money was distributed to 12,051 participants in the Carbide Savings Plan. Every two years, participants in the Savings Plan receive the money they have saved, plus a Company contribution, plus interest. Nationwide, this year, the payout to some 52,500 participating Union Carbide employees totals \$81 million—\$60 million in savings, \$14 million in Company contributions, and \$7 million in earned interest.

Under the Savings Plan, employees may authorize payroll deductions up to 7½ percent of their earnings to a maximum of \$83 per month. The Company contributes 10, 20, or 30 percent of this amount, depending on whether the employee has one, two, or three or more years of Company service.

Union Carbide employees living in Oak Ridge received approximately \$7,100,000. Other employees in Anderson County got about \$1,800,000. Distributions to other areas included: Knox County employees, \$3,900,000; Roane County, \$1,700,000; and Loudon County, \$80,000. An additional \$3,200,000 was received by employees living in other areas in Tennessee. Employees at Paducah, Ky., Gaseous Diffusion Plant received approximately \$1,500,000.

## Limited U. S. Companies

## AEC Will Provide Access To Enrichment Technology

The Atomic Energy Commission has announced that it will provide access to its uranium enrichment technology to a limited number of U.S.-owned companies desiring to carry out independent development work on uranium enrichment. Sensitive uranium enriching technology, including such technology as may be developed by the participating industrial companies, will continue to be classified as Restricted Data and require security protection.

### Several Sites Provided

The companies would have access to AEC data on both the gaseous diffusion and gas centrifuge processes for enriching uranium. The uranium enrichment activity is the only sector of the nuclear power industry still entirely operated by the Federal Government.

The gas centrifuge method is not now used by AEC to enrich uranium. This was one of several isotope separation processes investigated during World War II. The Government at that time selected the gaseous diffusion process as the most promising method, and work was discontinued on the centrifuge method until 1953. Since 1953, research has been carried on by the Commission at Oak Ridge and other locations. During the period 1961-1967, five private companies were granted access permits to AEC centrifuge information and certain of these companies undertook development work on this process. In 1967, after consideration of all factors, the AEC announced that national security interests would best be served if privately sponsored work on this process were discontinued at that time. Since then, gas centrifuge development in the U. S. has been limited to that carried out under cost-type contracts with the AEC.

### Both Methods Studied

The Commission now believes the time is appropriate to again broaden the U. S. developmental program in the enriching field to include participation by private industry. Current forecasts indicate that the first increment of new enriching plant capacity could be required as early as 1980 and that additional increments will be needed in subsequent years to meet the fuel needs of the rapidly growing nuclear power industry. Participation by industry in the development of enriching technology could lead, in the future, to the establishment of a private uranium enriching capability.

The access program will provide private industry with the opportunity to become familiar with the status of uranium enriching technology in both the gaseous diffusion and gas centrifuge methods and to perform independent development work. Such an approach may make feasible the investment by industry in new uranium enrichment facilities to meet future demand for nuclear fuel and/or in facilities for the manufacture of enriching systems

equipment. Private industrial firms in certain foreign countries, such as Germany and the Netherlands, are now working in the uranium enrichment field; thus, it is believed appropriate that U. S. companies become involved in the enriching program at this time.

### Security Involved

Because of the sensitivity of this technology to national security and the fact that there is a practical limit to the number of companies with whom the AEC can deal at any one time in making this technology available, the number of companies participating must be restricted. Accordingly, the program is composed of a two-step procedure for the selection of companies to have continuing access to AEC's enrichment technology. The first step calls for providing security clearances to a few officials from each of up to approximately 25 selected companies. These individuals will be provided access to classified technology in order to permit them to draw up formal proposals to conduct privately sponsored research and development on one or both of the classified processes. The second step would consist of the selection of up to approximately 10 of such proposals. Each organization so selected then would be permitted to conduct studies and perform development work. The participation of the

(Continued on Page 8)

## Welcome, New Readers

With this issue, **Nuclear Division News** becomes the publication for employees at all four facilities operated by Union Carbide for the Atomic Energy Commission.

This new eight-page paper will be published on a three-week basis and will continue to be mailed to the homes of all employees.

The four "outside" pages will be devoted to general news about the Division, while the inside pages will deal with news of specific interest to each of the four facilities.

## July Enrollment

**July is enrollment month for the Hospitalization, Special Medical and Major Medical Plans.**

Any employee who is not enrolled in the Hospitalization, Special Medical or Major Medical Plan can do so during the month without having to furnish a statement of good health.

In addition, any employee who wants to increase his coverage from single to family can do so without his covered dependents having to furnish a statement of good health.

Additional information and enrollment forms can be obtained from your insurance or benefit plans office.



# Carrier Designed for Man-Made Elements

by Raleigh H. Powell Jr.

Would you believe that anyone could get sentimental over seeing a 13-ton piece of equipment made of concrete, iron ore and depleted uranium for the last time?

It might seem a little far-fetched, but if you were one of several scientists, engineers, craftsmen, or technicians who had spent considerable time and effort in molding this "13 tons" into a very unique form for a specific purpose, you could understand how sentiment could creep into the picture just a little bit.

Illustrating the point makes quite an interesting story.

## 75 Mg Californium Recovered

For the past five years, research quantities of californium-252 and other heavy, man-made elements—curium, berkelium, einsteinium, and fermium—have been recovered in ORNL's Transuranium Processing Plant (TRU) and distributed to laboratories throughout the world for various experimental programs. Through 1970, about 75 mg of californium had been recovered, primarily from materials irradiated in the High Flux Isotope Reactor (HFIR). Even this small mass, because of the spontaneous fissioning of californium-252, represents a neutron source of about 100 billion neutrons per second.

Recently, at the Savannah River Production Plant in Aiken, S.C., a program of providing even larger quantities of californium (for commercial sales) as small compact neutron sources was envisioned and is now under way. The project includes a very aggressive loan program directed toward promoting the sales of californium. About 30 private companies have entered into research contracts, and a vast number of potential uses for these neutron sources are being investigated.

ORNL entered the picture because of its unique facilities at TRU which could be used this year to recover the initial 200 mg of californium for the Savannah River program. (Facilities at Savannah River under construction will be available within a year to continue the program on a projected multigram per year scale.)

## ORNL Asked To Design Carrier

Well in advance of the announcement of the new Savannah program (about 18 months ago), ORNL was asked to provide additional facilities at TRU and to design and construct a carrier capable of shipping 165 irradiated slugs from Savannah River to TRU for recovery of the 200 mg of californium contained in them.

Building carriers and containers for transporting radioactive materials was nothing new to the people at ORNL. They have been doing this for a long time—and quite successfully. As a matter of fact they designed and constructed the now famous "Cannonball" carrier used to ship sources con-

taining tens of milligrams of californium around the country.

But designing a carrier to ship the irradiated slugs just two weeks after discharge from a high-flux reactor was quite a different problem. In addition to the neutrons from the spontaneous fissioning californium, 500 grams of curium and several hundred thousand curies of fission products would be in the slugs.

## Challenge Accepted

The wheels began to turn. Under the overall direction of Chemical Technology Division people in the TRU program, the mechanical design was done in the General Engineering Division, and the shielding optimization was established in Chemical Technology's long-range planning group. Many engineers, craftsmen, technicians and procurement people were involved. Rather than ship the slugs all at one time, it proved more sensible to make a number of trips over a six-month period. The design chosen could handle 13 slugs per trip and 13 trips were made, proving among other things that people at TRU aren't superstitious.

Neutron shielding was provided by a water-rich special concrete containing limonite ore aggregate, while additional gamma shielding (and this is most important) was obtained from depleted uranium. The latter was fabricated at the Oak Ridge Y-12 Plant, while the principal carrier was constructed in the ORNL Fabrication Department. The entire carrier project was completed and ready for checkout in only 12 months.

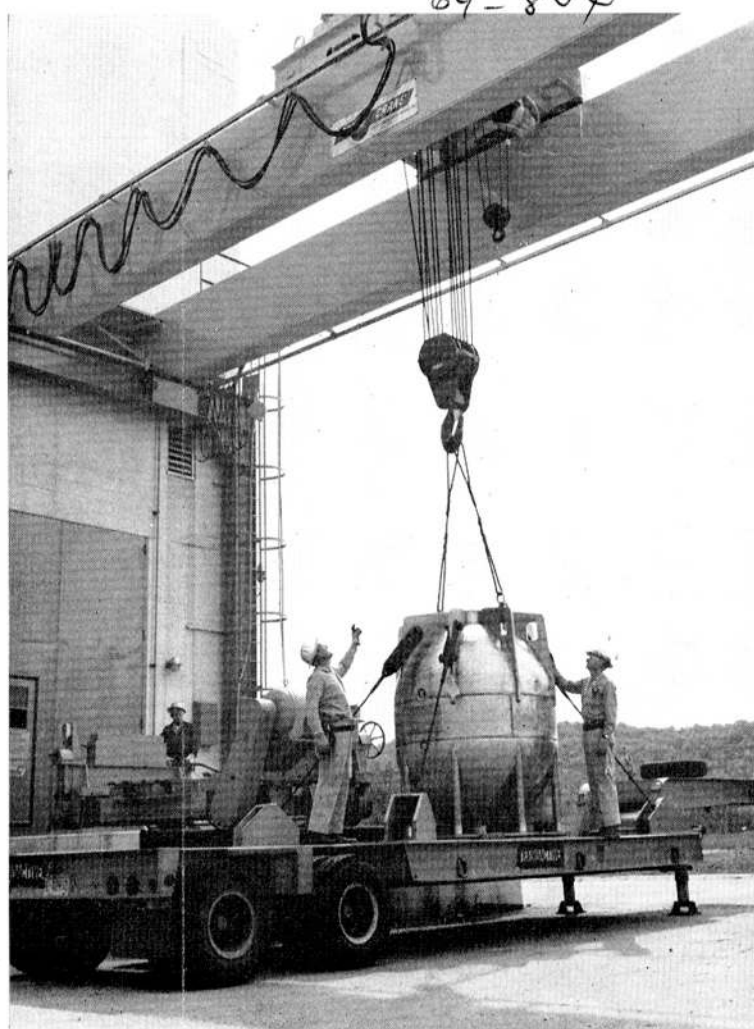
Many people at ORNL and Y-12 had a role in constructing a special piece of equipment that was unique to the nuclear industry. Even a last minute problem with the uranium shield was tackled and solved with only a couple weeks' delay. They were justifiably proud when the carrier was pronounced sound and ready for operation.

Some weeks ago this carrier was prepared for its final trip back to Savannah River—and as many of those who worked so long and hard to bring it to fruition watched it pull away from TRU, there just had to be a moist eye or two and possibly a lump in the throat somewhere in their midst.

## Another Carrier Under Way

But the story doesn't end here. The ingenuity and resourcefulness of scientists, engineers and craftsmen are being called upon again. Another carrier capable of transporting bigger "payloads" (larger fuel tubes) has been designed and is now being constructed for hauling more californium from Savannah River to TRU next year.

And what do you bet that when this one has brought the last fuel tube to ORNL, most of the people who had anything to do with it will get a little sentimental too?



**SECURED AND READY**—This 13-ton heavy element carrier, designed and constructed at Oak Ridge National Laboratory, is secured and readied for its final return trip to Savannah River. The carrier was capable of transporting 165 fuel slugs containing up to 200 mg of californium. Since this picture was made, the carrier has made the trip to the Savannah Plant and has now found its home somewhere in that vast complex. Another carrier, capable of transporting even larger 'payloads,' is now under construction at the Laboratory.

## Plants' Shuttle Schedules Are Revised

Those persons who ride the scheduled shuttle service between ORNL and Y-12 take note. The schedule has been revised.

The first shuttle of the day leaves the HFIR at 8:15 a.m., travels by 7503, 7500, 1000 and arrives at West Portal at 8:20 a.m. From there the shuttle travels by the cafeteria, 3042, arrives at the north side of 4500N at 8:23 a.m., circles 4500S and departs the East Gate near 5500 building at 8:25 a.m. The shuttle then travels past 6000, 7000 area and arrives at the East Portal of Y-12 at 8:37 a.m. In Y-12 the shuttle travels past 9704-1, 9711-1, 9733-2 and 9204-3.

The shuttle begins its Y-12-ORNL run from Building 9731 at 8:45 a.m., passes 9733-2, 9711-1, 9201-2, 9201-3, travels along "A" road and departs East Portal at Y-12 at 8:48 a.m. Arriving in the ORNL area the shuttle travels by the 7000 canteen, 6000, and reaches East Portal at 9 a.m. The shuttle continues its schedule past 3042 to West Portal and back to HFIR.

The above schedule is repeated at one hour intervals with the following exceptions. The 11:45 a.m. run from Y-12 will stop at area 7000 for lunch if no one is on board, otherwise passengers will be discharged at Building 5000. No run is scheduled to leave ORNL at 12:15 p.m. A run is scheduled to leave Building 5000, parking lot side, at 12:30 p.m.; however, this may be as late as five minutes if a high volume of passenger activity is experienced on the 11:45 a.m. run from Y-12. The last ORNL to Y-12 run will

leave HFIR at 3:15 p.m. The 4:15 p.m. departure from HFIR will follow the normal route but will terminate when it arrives at Area 7000. The last Y-12 to ORNL run will leave Building 9731 at 3:45 p.m. and will normally terminate at the East Portal, Building 5000 unless there are those aboard who have departed Y-12—they will be taken to their destination within ORNL.

The ORNL-ORGDP shuttle run will leave the elevator dock at the southside of 4500N at 6 a.m., 9:20 a.m., 10:40 a.m., 12:30 p.m., 1:50 p.m. and 3:10 p.m. The ORGDP-ORNL shuttle will depart K-1007 (Central Processing Entrance) at 8:40 a.m., 10 a.m., 11:20 a.m., 1:10 p.m., 2:30 p.m. and 3:40 p.m.

## Atom in Space

By GLENN T. SEABORG

Unmanned satellites, perhaps powered by nuclear batteries or miniature nuclear reactors, may hold the key to applying space knowledge gained in exploration to efforts to improve life here on earth. Satellites such as Telstar, Nimbus, and Early Bird have demonstrated that these "eyes in the sky" can provide us with important information—information that will allow us to act more intelligently in solving many of our environmental problems.

Earth Resources Satellites, inaugurated in the 1955 International Geophysical Year, show tremendous potential as research tools in such disciplines as geography, oceanography, geology, meteorology, and even agriculture. For example, photos snapped by sophisticated satellites may detect the direction of spreading plant and tree diseases. Such instant photos of large agricultural areas may give a daily "crop census," enabling us to predict crop yields, a technique which will give us early warnings of famines. Similar satellites may provide information on irrigation requirements, while other satellites may help us learn more about the sea—the temperature and currents of the water, the migration of marine life, and zones of pollution.

## Advance Weather Word

Today, weather satellites are already helping us respond to the environment. In 1969 Hurricane Camille killed less than 300 people. Without the early warning provided through the Environmental Science Service Administration's data gained from satellites, as many as 50,000 may have lost their lives. It has been said that if, through an improved system of weather satellites and other meteorology equipment, we can forecast our weather two weeks in advance, we could save as much as 60 billion dollars—\$60,000,000,000—annually on a global basis. This is not to mention the human suffering advance warning of natural disasters could prevent. It's the old matter of "an ounce of prevention," and in the case of such things as hurricanes, typhoons and floods advance warnings can definitely help man adapt to the whims of his environment.

## High-Orbiting Satellite

There is still another kind of satellite that is also going to be important and that is the communications satellite that we hope will be one of the most influential forces in uniting mankind around the globe. Perhaps the most familiar example of such satellites at work are the international television broadcasts via satellite of the Olympics in Mexico, the induction of the Prince of Wales, and the opening of Expo '70 in Japan.

Someday similar systems, utilizing long-lived nuclear-powered synchronous satellites in orbit 22,000 miles above the Earth, will make direct TV transmission to all peoples on earth a reality. And if we use this innovation wisely we will have an educational force at our command capable of uniting and uplifting man in a way never before thought possible.

## WHALE OF A MODEL

Great blue whales are among the rarest of animals. Even more rare is the life-sized model of one recently displayed at the American Museum of Natural History in New York City. The 94-foot replica is made of rigid urethane foam and reinforced plastic.

**Break  
in case of  
emergency.**



**Take stock in America  
Buy U.S. Savings Bonds**

## NUCLEAR DIVISION NEWS



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JAMES A. YOUNG, Editor Ext. 3-7100  
MARTHA GOOLSBY, Assoc. Editor Ext. 3-6421

— Member —

APPALACHIAN INDUSTRIAL EDITOR'S ASSOCIATION  
INTERNATIONAL ASSOCIATION OF BUSINESS COMMUNICATORS

OFFICE

POST OFFICE BOX Y, OAK RIDGE, TENN. 37830



## From a Woman's Viewpoint

By Helen Housman

### INDIVIDUALIST

(From Medical World News)

A young man lived with his parents in a public housing development. He attended public school, rode the free school bus, and participated in the free lunch program. He entered the Army and upon discharge kept his national life insurance. He then enrolled in the state university, working part time in the state capitol to supplement his GI check.

Upon graduation, he married a public health nurse and bought a farm with an FHA loan and then obtained a Small Business Administration loan to go into business. A baby was born in the county hospital. He bought a ranch with the aid of a GI loan and obtained emergency feed from the government.

Later he put part of his land in the soil bank and the payments helped pay off his debt. His parents lived comfortably on the ranch with their Social Security and old-age assistance checks. REA lines supplied electricity. The government helped clear the land. The county agent showed him how to terrace it. Then the government paid part of the cost of a pond and stocked it with fish. The government guaranteed him a sale for his farm products.

Then one day he wrote his congressman: "I wish to protest excessive government spending and high taxes. I believe in rugged individualism. I think people should stand on their own two feet without expecting government handouts. I am opposed to all socialistic trends and I demand a return to the principles of the Constitution!" (Author unknown).

\* \* \*

### FAR OUT OF UNIFORM

(From the British Nursing Times feature, "Words from the Wilderness"):

"When the nurses are in school they do not wear uniforms, but just their ordinary clothes, but they are off every evening." This extraordinary statement is contained in the literature sent to prospective student nurses from a hospital which shall be nameless. One only hopes that the central heat there is adequate.

## Kenneth Smith Sets Retirement June 30

Kenneth C. Smith—a man with a broad smile and cordial greeting—retired the end of June.

Smith was born in Thorsby, Ala. His early life was spent in Clanton, Ala., where he obtained his education.

His count-down to retirement actually began over 50 years ago when he started delivering papers, then as a Western Union messenger boy, cinema projectionist, carpenter's helper, electrician's assistant, and wrought-iron worker. He went on to hydroelectric construction, operations, and maintenance with the Alabama Power Company and then to being a system load dispatcher for Middle South Utilities and South Western Power Pool.

Smith was employed between 1944 and 1948 at the Oak Ridge Gaseous Diffusion Plant as load dispatcher and as a supervisor in the Electrical Systems of the Operations Department. For the next three years, he owned and managed the Silver Leaf Tourist Court, McGehee, Ark. He came to the Paducah Plant in 1951 where he has filled supervisory positions in Power and Utilities, Cascade Operations, the Feed Plant and the Metals Plant. For the past several years, he has been responsible for statistics and records for the Power and Utilities Department.

Smith is married to the former

Martina Belle LeCroy, of Alabama. They are the parents of four daughters, Mary Charles, Karen Clyde, Nancy Carol, and Kathryn Cordelia. They have three granddaughters, and two grandsons.

The Smiths reside at 714 North 25th Street in Paducah. Smith is an Administrative Board Member of the Broadway United Methodist Church and is chairman of the Committee on Missions, member of the Nominating Committee, teacher of a men's Bible class, president of the Chancel Choir, certified district lay speaker, and district member of the Memphis Conference Associates in Renewal.

After retirement, Smith will launch a new career. He will become a volunteer staff member of the Broadway United Methodist Church with primary duties of coordinating local church missions in several fields.

the CHOMICAL world of Rosenthal



"Everyone calls me Kay, but my real name is Potassium."

## Kentucky Elks Pick Naive As President

2003



W. Thomas Naive

W. Thomas Naive, Paducah Elks Lodge 217, has been installed as president of the Kentucky Elks Association. He was elected at the 64th annual state Elks Convention recently held in Paducah.

Naive has been with Union Carbide since 1945, first hiring into the Oak Ridge Gaseous Diffusion Plant. He transferred here in 1951. He is an engineering draftsman in the Operations Division. Naive joined the Elks Lodge nearly a quarter of a century ago. He has twice served as the exalted ruler of the Paducah lodge, and three years as vice president of the Kentucky association.

## Credit Union To Pay 5.5% Dividend Here!

The directors of the C-Plant Employees Federal Credit Union have announced a dividend rate of 5.5 percent per annum for the dividend period ending June 30, 1971. Robert Ligon, president of the board, has indicated that the dividend of June 30 will probably exceed any previous semi-annual dividend. Dividends will be added to savings in July and will earn a dividend for the entire month of July.

Since the end of January, members have increased their savings by an average of one percent per month. The average savings per member as of May 31 was \$895. Bill Etter, credit union manager, states that the increase is due to recent legislation by Congress that insures each account up to \$20,000, the above-average dividend rate, and the convenience of saving by payroll deduction.

The credit union is now accepting applications for college loans under the Higher Education Act of 1965. There is a possibility that funds will be available for school loans the latter part of July.

## Paducah Gaseous Diffusion Plant

### Carpool Charlie Sez

## Invocation for New Combo

O Possessor of Infinite Wisdom, Knowledge and Understanding, who entrusts to others the task of communicating through the written word, grant also to these, thy vacillating vassals, the power to portray the temper of the times, the humor of the hour—yea, even occasionally, the beauties of the beach.

Deal kindly with us in your criticism—for tolerance is indeed a virtue. We knowest—yea, only too well—that ye prefer both good grammar and good taste—but may ye be content to accept a reasonable amount of bad grammar with good grace—for this is both our weakness and our strength.

Look with lenient eye upon our valued contributors—even tho' they as we never use one word when 10 will do. For verily this maketh the life of ye olde editor easier.

May we all realize anew the many recognized ways of rendering a service—spreading the truth (however thinly), keeping the faith, destroying prejudices, and even hopeful of bringing a tinge of humor back to an area that is fast becoming mirthless.

\* \* \*

A Carbide father of a recent graduate says that his kid wouldn't have graduated if he hadn't pulled a couple of wires—the telephone wire and the TV wire.

\* \* \*

The TV Guide now has a rival for inaccuracy in the Benefit Plant Sheet recently mailed to Carbiders.

\* \* \*

### Favorite Line

Life is a joke and all things show it—I thought so once and now I know it.

4056 2



## Clarence O. Hayes Promoted Recently

Clarence O. Hays has been promoted from the operator classification to fill the vacancy created by K. C. Smith's retirement. In his new position, he is primarily concerned with power and utilities statistics and analyses.

A native of Arkington, Ky., he attended school in Cairo, Ill., and was graduated from St. Joseph High School in 1937. Prior to his employment at the Paducah Plant, he was associated with Sperry Products, Inc., Rail Service Division, Danbury, Conn. As chief operator in charge of one of their rail flaw detector cars, he traveled extensively over the major railroads of the United States and Canada.

A desire to return to the Southern Illinois-Western Kentucky area resulted in his employment at the Paducah Plant in June, 1951, where he was assigned to the Power and Utilities Department.



Karla Faye Fuller

## Fuller Daughter Is Scholarship Winner

Karla Faye Fuller, daughter of Mr. and Mrs. Carl Fuller, Reidland, Route 8, has been chosen as one of the recipients of the Harding College Home Economics Award for the fall of 1971. The award consists of a \$1,000 scholarship.

Miss Fuller, a 1970 graduate of Reidland, was chosen on the basis of her academic records, and outstanding leadership in classes and in the FHA.

Majoring in home economics—dietetics, she has attended Freed-Hardeman College and will begin her work at Harding in August.

Fuller is employed in the Machine Shop.

ment as a Power Operator. He continued in this capacity until March, 1971, when he was promoted.

Paducah Editor . . . . . Keith Bryant  
extension 369



## Oak Ridge Gaseous Diffusion Plant

### COURTESY CARD

Courtesy, the miracle ingredient of safety, is a friendly word faintly seasoned with a wisp of the Golden Rule, courtesy is a favor performed with politeness and when accompanied by a smile or affable greeting it's self-rewarding and extremely contagious.

In our parking areas courtesy is the key to our traffic control — the silent policeman and the judge of our traffic manners. It's a lot of little things — not bumping your door against the car parked beside you — waiting for the other fellow to move out ahead of you. It's giving the pedestrian a break and it's parking between the lines. Courtesy is reminding your riders to fasten their seat belts or showing patience when traffic slows, or helping the guy with a flat tire or a dead battery, courtesy is liking the people around you and it's making friends instead of enemies with your car.

The habitual practice of politeness will prevent parking lot accidents and spare us the heartache and remorse of having injured a friend or a co-worker through our own discourteous conduct.

#### ACCIDENTS COST — COURTESY PAYS!

(The above message was placed under the windshield wipers of cars in the K-25 parking lots during the week of June 14-18.)

### POEM

—by Ben Anonymous

Courtesy is quaint and said to be  
So very square, like four by four.  
But don't shake your head and sell it short  
Until you've checked the safety score.  
It's many things we like to do,  
And some we'd rather not;  
Like waiting for a traffic creep;  
Or yielding in the parking lot.  
It's grin and bear it when you're annoyed;  
Keeping your cool when you're perturbed.  
In essence it's the golden rule,  
But it's more than just the words.  
It's opening your door  
Without denting another's car;  
Or pulling into a parking space  
But not too close and not too far.  
Courtesy must be a balanced blend  
Of lots of give and lots of take;  
In parking lots the "take" is time,  
The "give" is break for safety's sake.  
So back to us in parking lots  
Where traffic's like a troubled sea.  
It's not a cop, or light we need,  
But courteous you and courteous me.  
Others' actions may seem absurd,  
And often I guess, we'll be annoyed;  
But don't despair or give up yet,  
Courtesy will work if it's employed.



**FIRST CUSTOMER**—K-25 Credit Union boasts its first customer in the new building. John Houston Shumpert, son of J. M. Shumpert, General Accounting, is seen opening a savings account with Mary Ball when the Credit Union opened for business on June 17 in their brand new building. The new building is located west of the Grove Center area on Raleigh Road, Oak Ridge.

## AEC Toll Enriching Contracts Now Total 70; Four New Ones

The Atomic Energy Commission has signed four new contracts for providing approximately \$189,464,433 in uranium enrichment services to the nuclear power industry.

The new contracts bring to 70 the number of uranium enriching agreements signed by the AEC since its toll enrichment program began in January of 1969. Thirty-four of the contracts were signed with domestic firms and 36 have been signed with firms abroad.

Presently, there are 56 active contracts (27 with U. S. firms and 29 with firms abroad), covering supply periods up to 30 years duration and with a total value of approximately 3.5 billion dollars.

#### For Arkansas Reactor

The four new contracts are with Arkansas Power and Light Company of Pine Bluff; Carolina Power and Light Company, Raleigh, N. C.; Consumers Power Company, Jackson, Mich.; and the General Electric Company, San Jose, Calif. The latter contract is the fifth toll enrichment contract the AEC has signed with GE.

The largest of the four contracts is with Arkansas Power and Light, calling for the AEC to provide the company with approximately \$187,939,200 in enriching services over the next 30 years. Enriched uranium provided under the contract will be used in the fabrication of fuel elements for Units 1 and 2 of the Arkansas Nuclear One generating station near London, Ark. Unit 1 is scheduled to go into operation in 1973 producing 850,000 kilowatts of electric power, and Unit 2, with

a capacity of 950,000 kilowatts, is scheduled for startup in 1975.

#### For New Fuel

A total of \$853,165 in enriching services will be provided by the AEC under its contract with Carolina Power and Light. The enriched uranium supplied will be fabricated into fuel for the Company's H. B. Robinson Nuclear Power Plant, Unit 2, at Hartsville, S. C. The plant is scheduled for operation this year.

The contract with Consumers Power Company calls for the AEC to provide \$481,586 worth of enriching services. The enriched uranium involved will be used as fuel in the Company's Big Rock Point (Mich.) Nuclear Power Plant which has been in operation since 1963, producing some 70,300 electrical kilowatts.

#### New GE Contract

The latest contract signed with General Electric involves \$190,482 in enriching services to provide enriched uranium required for use as working stock at GE's Wilmington, N. C., fuel fabrication facility.

Enriching services contracts between the U. S. Government and the builders or operators of nuclear power plants for the production of electricity represent the primary method for the supply of enriched uranium for fueling these plants.

Enrichment of uranium involves the separation of the fissionable uranium-235 isotope, which makes up less than one percent of uranium as it occurs in nature, from the more abundant uranium-238 isotope.

## Donald R. Lawrence Named Foreman In Fabrication, Maintenance Division

Donald R. Lawrence was recently promoted from planner and estimator to machining foreman in the Machine Shop, Fabrication and Maintenance Division. He has been employed at ORGDP since November 1963. In addition,

to his work as a machinist, Lawrence has taught algebra in the Machinist Helper Training Program. Before that he worked as a machinist, tool and die maker and machine parts inspector.

Lawrence is a native of Decatur, Ala. He was graduated from Hume Fogg Technical and Vocational High School in Nashville. Mrs. Lawrence is the former Era Dean Reed from Pleasant Shade, Tenn. They live on Paint Rock Ferry Road, Route 2, Kingston. They have two sons, Randall Keith and Timothy Wade.

Outside interests for the new foreman include golfing and fishing. He also coaches little league play in baseball, football and basketball in Kingston.



Donald R. Lawrence

## K-25 Credit Union Sets Open House for July 24

The new quarters of the K-25 Credit Union are located at 170 Raleigh Road, Oak Ridge, near the Grove Center shopping area. An open house will be held Saturday, July 24, from 1 to 5 p.m. A photo of the new building and more information on the operations will be in the next issue of Nuclear Division News.

ORGDP Editor ..... Harold Mayberry  
extension 3-3097

## Jesse Boatman, CTC, Dies June 11 at Home

Jesse Payton Boatman, 59, died suddenly at his home at 3006 Woodbine, Knoxville on June 11. He had worked as a computer systems programmer in the Systems Technology Department, Computing Technology Center, having been originally employed on March 1, 1954.



J. P. Boatman

Boatman was a native of Cookeville. He received a B.S. Degree from Milligan College and taught at Jonesboro High School before entering the U.S. Navy. He was a Navy lieutenant during World War II. After leaving the service, he received a M.A. in mathematics from the University of North Carolina and taught math at the Citadel in Charleston, S. C. He also received a M.S. degree from The University of Tennessee and served as Roane County Agricultural Agent for five years before coming with Union Carbide.

Survivors are his wife, Lovella Carey Boatman and two sons, Roger, Titusville, Fla., and Jesse, residing in Knoxville.



**PROMOTED**—Riley D. Underwood, former K-25er, was recently promoted to Army Specialist Four in Germany where he is serving with the 23rd Ordnance Company as a nuclear weapons maintenance specialist. Spec. Underwood worked in Building and Grounds before he entered military service last June. His father, Riley, Sr., also works there.

## Purchasing's Poston Dies at Powell Home

Carl Ray Poston, 46, a specialty buyer in the Purchasing Division, died suddenly at his home on Route 4, Irwin Road, Powell, on Saturday afternoon, June 19. He had been employed by Carbide since December 1952.



C. R. Poston

Before coming to ORGDP, he had worked for the R. J. Strasenburgh Company of Rochester, N. Y. He served over two years in the U. S. Army Air Force during World War II.

Poston was a native of Carthage, Tenn. Survivors include his wife, the former Doris Croley; a son, John, living in Powell; a daughter, Mrs. Carol Harold, residing in Knoxville; and two daughters, Cathy and Lisa, at home.



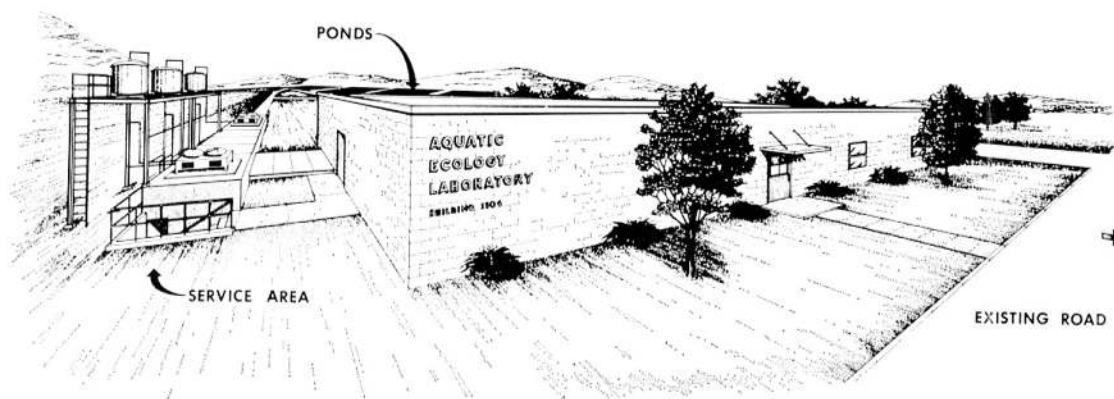
Want to join carpool from Rocky Hill Section of West Knoxville to Administration Area, 7:45 to 4:15. Charles Sampson, phone 3-3329, home 588-5641.

### SAFETY SCOREBOARD

OUR PLANT  
Has Operated  
705,000 Safe Hours  
Through June 24

Since last disabling injury on May 4





**ARTIST'S CONCEPTION** of the new Aquatic Ecology Laboratory now under construction at ORNL. The laboratory will be ready for use in early 1972. C. C. Coutant (Ecological Sciences Division) will be in charge of the facility.

## Aquatic Ecology Facility Is Being Built At ORNL To Study Thermal Effects

A new Aquatic Ecology facility to study the effects of heated water on fish and other aquatic life is being constructed at ORNL.

The new Laboratory, scheduled for completion by February 1972, will be the most advanced of its type. It will house experimental tanks, water supply and control equipment needed for study of effects of heat and other potential water pollutants on fish and other important aquatic organisms.

The research will be supervised by Charles C. Coutant, Ecological Sciences Division. The principal objective will be to predict possible beneficial or adverse environmental effects in advance of constructing nuclear power plants. The data produced can be used in selecting a site for proposed plants or in designs of cooling systems. The new facility will feature a pumping system which will enable the ecologists to simulate thermal discharges of power plants.

Specialized research facilities will be provided to obtain urgently needed information on the interactions of temperature, radioactivity and pollutants as they may affect living organisms. Experiments will emphasize ecological processes affected by siting, design and operation of steam-electric power plants, both nuclear- and fossil-fueled, and will include beneficial effects of waste heat.

## ORNL Credit Union Pays 6 Percent Dividend Today

The ORNL Credit Union will pay a six percent dividend on savings today, July 1. This is the highest dividend paid by any financial institution in our area on savings which are accumulated in smaller amounts and readily available for withdrawal. Savings are insured up to \$20,000 by the National Credit Union Administration.

If you are undecided about what to do with your Savings Plan Check, these are two excellent reasons for making your deposit in the ORNL Employees Federal Credit Union — higher earning and the security of insured savings. If you haven't joined the Credit Union, this is a good time to join. Money deposited by July 10 will receive the full third quarter dividend in October. You may deposit any amount up to the savings limit of \$20,000. You may withdraw your funds at any time by simply calling the Credit Union Office. Your withdrawal check will be sent out immediately.

Remember, deposits made by July 10, earn the full third quarter dividend when left on deposit through September 30.

The scientific staff plans to study both short-term effects, such as passing organisms through the cooling water condensers, and long-term effects resulting from possible changes in seasonal temperatures of water bodies.

The laboratory facility will be used in conjunction with ecological field studies being undertaken in Tennessee at the Bull Run Steam Plant and other power stations operated by the Tennessee Valley Authority. Research will be coordinated with the AEC-sponsored thermal effects studies at Hanford, Wash., and Savannah River, S. C., and several colleges and universities.

## Company Service

ORNL employees who celebrate company service dates during June are:

### 25 YEARS

H. C. Thompson, Frederick Nelson, J. T. Howe, L. A. Eckert, T. C. Whitson, C. E. Ryan, W. B. Anderson, J. B. Ruch, R. M. Steele, C. E. Haynes, W. A. Lowry, C. H. Tucker Jr., Helen Zang, L. C. Johnson, T. B. Wilson, Tip Arwine.

### 20 YEARS

J. N. Robinson, C. M. Fitzpatrick, Hallie Nidiffer, D. L. Manning, J. L. Bailey, W. A. Duggins, Donald Kiplinger, E. W. Bean, H. A. Friedman, Margaret Albritton, W. G. Sterling, R. G. Carver, R. A. Weeks, R. P. Norris Jr., Urpo Koskela, C. E. Ryan, J. R. Buchanan, J. T. East, R. L. Bradshaw, D. H. Newman, Jeannine Bandy, Donald Zucker, J. H. Burkhardt, J. W. Wachter, L. L. Allen, H. A. Shambelin, G. M. Slaughter

## Fox Daughter Graduates Tops at Lenoir City High

Susan Fox, daughter of Bobbie E. Fox of Plant and Equipment Division, has graduated as valedictorian of the 1971 Lenoir City High School. Susan, a math and science major, won the Eaton Corporation scholarship, a cash award from the Nu Chapter of Delta Kappa Gamma and the Rotary Club Outstanding Senior Award. She placed fifth in the Southern Appalachian Science Fair.



Susan Fox

Miss Fox plans to attend the University of Tennessee. She is interested in teaching, pharmacy, drafting and engineering.

## Retirees

"I can not sit down and do nothing." That's the way Francis Parrott feels as he takes early retirement this month. And what will he do? Move to the farm.



**Francis Parrott** In preparation for his retirement, Parrott bought a small farm in Heiskell last year and has moved there from his home in Knoxville. He already has a garden growing on it as well as another one in Knoxville. He says he wouldn't want to live anywhere he couldn't garden.

Parrott, who has been a millwright in Plant and Equipment Division for 25½ years, is a big TV fan and also is planning to catch up on his fishing and plant some flowers for his wife.

"You're as young as you think," says Parrott, "and I am to enjoy my retirement for a long time."

Guard George G. Kidwell is an early bird who greets early birds — at least those who arrive at North or South Portals before 7:45 each morning. Kidwell has worked an early shift beginning



George Kidwell

at 7:15 for several years of the 28 he has been a guard at ORNL. And no conversation about his work is very old until he says, "I'll always remember those pleasant faces who greet me each morning."

Before his employment in 1943, Kidwell farmed in Union County, and now with his retirement he is returning to his small farm in Powell. He plans to do some farming, fishing and traveling to Texas and Florida.

**Hal H. Stone**, chemist in Reactor Chemistry Division, will be taking early retirement this month. He has been at ORNL for the better part of the last 20 years, although part of this time was on loan from Southern Illinois University where he taught Analytical Chemistry before coming to ORNL.



Hal H. Stone

Now Stone has more time translating both French and German and for his interest in archaeology, especially Mesopotamia and Syria. He also plans to travel to Europe and see more

## Oak Ridge National Laboratory

## American Nuclear Society Names Fellows from ORNL

Four ORNL staff members have been elected Fellows of the American Nuclear Society. The announcement was made June 15 at the Society's annual meeting in Boston.

Candidates are nominated by their fellow-members and the honor is awarded for outstanding accomplishments in any one of the areas of nuclear science and engineering by notable original research or invention, by technical leadership of substantial scope and by outstanding leadership in teaching.

The four receiving fellowships are:

**Samuel E. Beall Jr.**, director of Reactor Division, for his pioneering work in the development of nuclear technology, his contributions to the successful construction and operation of experimental reactors, and his overall guidance of a wide variety of projects related to the development of civilian power reactors.

**Gerard de Saussure**, Neutron Physics Division, for his significant contributions to the measurement of neutron transport parameters using pulsed sources, especially the measurement and interpretation of neutron cross section of the fissionable uranium and transuranium isotopes.

**Warren R. Grimes**, director of Reactor Chemistry Division, for his outstanding achievements in research and development of reactor materials, particularly molten fluoride salts and hafnium-free zirconium, and for distinguished leadership in the Materials Science and Technology Division of ANS.

**Fred C. Maienschein**, director of Neutron Physics Division, for his leadership in providing the nu-



Grimes



Maienschein



Beall



de Saussure

clear data needed for designing reactors and shields.

The honor was also awarded posthumously to W. K. Ergen, an ORNL staff member who died earlier this year. His award was given for his contributions to the field of nuclear safety.

## 200,000 Curies

## Largest Cesium-137 Shipment Is Made

Oak Ridge National Laboratory has completed the shipment of some 200,000 curies of the radioisotope cesium-137, one of the largest shipments ever made of this material from ORNL.

The cesium-137 material, valued at some \$25,000, was shipped from ORNL's Isotope Division to the French Atomic Energy Commission's Department of Radioelements in Gil Sur Yvette, France, in two separate shipments: a 98,424 shipment on June 11, and an earlier shipment of 101,583 curies on March 30.

Cesium-137, a radioactive by-product from the fissioning of uranium atoms in a nuclear reactor, is an emitter of gamma rays with a half-life of 28-30 years, making it useful in the field of medicine for treatment of cancer and related diseases.

Cesium feed material is received at ORNL from the AEC's Hanford Operations in Richland, Wash. At ORNL's Fission Product Development Laboratory the material is further purified to a powder form (cesium chloride).

ORNL distributes radioisotopes which are not available commercially, and, in the case of cesium-137, possesses specialized processing equipment for handling large quantities of this radioisotope which is not available in industry.

## LOST AND FOUND

**Found:** Masonic ring, yellow gold, size 10 or 11; lady's cream-colored glove.

**Lost:** House keys.

For information concerning lost and found items, contact Guard Headquarters, 3-6646.



TWO carpool members from vicinity of West Hills, Suburban Estates or Cedar Bluff. Marion Cooper, 3-6521.

RIDE from Crestwood Hills subdivision (Shawn Drive), Suburban Hills or Green Acres to East Portal, arriving 8:15 a.m. E. L. Fair, 3-6775 or 588-8828.

of his daughters, one in Israel, another in California, and to devote more time to plant breeding. He has been interested for many years in developing new strains of grapes and has provided plants for several area vineyards. During this time just as a hobby, he nearly completed the resident work for a doctorate in grape growing at the University of Illinois at Champaign-Urbana. He predicts that grape growing in the East Tennessee area could rival California if the proper strain of plants were set and there were sufficient interest. If you're interested, look him up at his home on Rand Circle in Oak Ridge after July 1.

ORNL Editor . . . . . Martha Goolsby  
extension 3-6421



## Oak Ridge Y-12 Plant



Scott

West

### Health Physics Paper Is Set for German Meeting

"The Use of Automation and Computerization in the Oak Ridge Y-12 Plant's Environmental Monitoring Programs" will be discussed by a Union Carbide health physicist at the Symposium on Quick Methods for Environmental Radioactive Monitoring in Neherberg, Germany, July 5-9.

C. M. West will present the paper, which is co-authored by L. M. Scott. Both men are members of the Radiation Safety Department at Y-12.

Automated systems to be discussed by West include: a technique using gamma spectrometry in a computer program to count and identify up to 20 gamma emitters in a sample; use of a mobile radiation monitoring laboratory and an associated computer program to facilitate area dose measurements in the event of a nuclear accident; and use of hundreds of air and surface monitoring stations equipped with filters attached to computer cards which are removed each day and analyzed within minutes by a radiation monitor attached to a computer.

### RIDE WANTED

Rider wanted from South Harman to any portal, straight day. C. D. Wills, home phone Harriman 882-3957.

### 170 New Participants In New TAT Program

One hundred seventy new participants have been enrolled this spring in the Training and Technology (TAT) Project's worker-training program at the Oak Ridge Y-12 Plant. Of this total, 142 trainees, or more than 83 percent, are from the Knoxville-Oak Ridge and immediate East and Middle Tennessee areas.

The six-month TAT industrial skill and technical training program is conducted jointly by Oak Ridge Associated Universities, an Atomic Energy Commission contractor for educational and research programs, and Union Carbide Corporation's Nuclear Division, which operates Y-12 and other nuclear production and research facilities for the AEC.

Since its beginning in 1966, TAT has trained approximately 1,400 persons to the entry level for industrial employment. These trainees have accepted jobs with 200 different industrial firms nationally, at wages more than \$3 per hour. A majority were either unemployed or employed at very low wages before entry into the program.

### 4th Golf Tournament At Southwest Point

Y-12's fourth golf tournament of the year will be held at South West Point, Kingston, Saturday, July 24. Registration will be taken early for tee-off times.

Dead-line for entries is set for Wednesday, July 21. Tee-off times will be drawn the next day and foursome leaders notified of their starting times.

Carts are available, but cannot be assigned until after tee-off times are determined. They may be reserved by calling Kingston 376-9138.



### O. J. Horne Earns Chemistry Degree

Ottis J. Horne, Jr., Chemistry Development, was recently graduated from The University of Tennessee with a master's degree in organic chemistry.

Horne, a native of Jackson, Miss., had a B.S. from Mississippi College, Clinton, Miss. He has done graduate work at the North Carolina State University at Raleigh. He was a laboratory instructor there and at Mississippi State, before coming here July 8, 1968.

Mrs. Horne is the former Mary Helen Thurman. They live at 127 Amherst Lane, Oak Ridge, with their small son, John.

Horne's thesis was entitled, "Mesophase Formation and Polymers of Cinnamylidene and Acenaphthalene." Much of his graduate work was done under the Carbide Educational Assistance program.

### SAFETY SCOREBOARD

The Y-12 Plant Has  
Operated  
5,763,000 Man-Hours  
Or 146 Days  
(Unofficial Estimate)  
Through June 27  
Without A Disabling Injury  
SAFETY AT HOME,  
AT WORK, AT PLAY

## Y-12 Milestones

Congratulations to the following Y-12ers marking important dates with Union Carbide Corporation.

### 30 YEARS

Phillip S. Lewis, Jr.

### 25 YEARS

Halbert E. Argo, Ralph Ledford, Burrell A. Davis, Paul E. Barker, James E. Miles, Wilbur C. Olka, Cecil W. Cate and Eugene W. Woodward.

### 20 YEARS

Iva H. Jones, Amos R. Shamblin, Thomas H. Jimmerson, Joseph H. Stewart, Jr., Ray N. Whitehorn, King C. Burgess, John B. Graham, Hubert C. Morgan, J. R. Rutter, Albert L. Foland, Thurston B. Caldwell, Edward Owings, Leonard Gibson, Jack R. Day, Willie F. Ragsdale, Ethel M. White, Hubert A. Marrow, Roy C. Smith, Hugh T. Christie, Sallie B. Cornell, Harold E. Alvey, Elmer R. McConkey, Allen H. True, Holstead Meadows, Sr., Finley B. Clowers, Claude A. Reed, Joe Whittaker, Robert H. Bacon, Louie C. Bell, Lennie C. Jeffreys, Randle E. Brown, Edward E. Dunn, Ralph H. Norman, George W. Byrge, Wade K. Jackson, Raymond D. Bass, Pauline P. Williams, Elmer W. Wilder, Theodore R. McCullah, Alvin J. Kerley, Lathrisia P. Tilley and Robert B. Smith.

### Nuclear Engineer Text To Include Reagan Work

Sections of an article written by a Y-12er will appear next Spring in a college textbook entitled "Basic Nuclear Engineering."

Paul Reagan, Metal Preparations Division, authored an article "Radiation Performance of Pyrolytic-Carbon and Silicon-Carbide Coated Fuel Particles," in the eighth volume of **Nuclear Applications & Technology**. Co-authors, along with Reagan, were J. G. Morgan, J. H. Coobs and E. L. Long, Oak Ridge National Laboratory.

Allen & Bacon will publish the book, to be edited by A. R. Foster and R. L. Wright, due to be released in January of 1972.

### ENTHUSIASM

Enthusiasm is the outward reflection of inner belief. It reflects our belief in ourselves, our company, our product or service.

## Daughters of Y-12ers Earn School Honors

Congratulations to two daughters of Y-12ers who recently brought honors home.

### Leads Oliver Springs

Miss Karen Huddleston, daughter of the L. B. Huddlestons (he's in Y-12's Stores) of Route 1, Oliver Springs, was named valedictorian at Oliver Springs High School with a four-year average of 97.7.

Miss Huddleston majored in mathematics. During her senior year she received the following awards: A \$25 savings bond for the Most Outstanding Senior, presented by the Oliver Springs Lions Club; Who's Who in American High Schools; All-State East Band; math award; English award; literary award; Danforth leadership award; typing award, band award, American Legion Girls State award, DAR award and the Betty Crocker award.

The honor student has been granted a music scholarship to study the French horn at Tennessee Technological University, Cookeville. She plans to enter there this fall.

### Joins Air Force

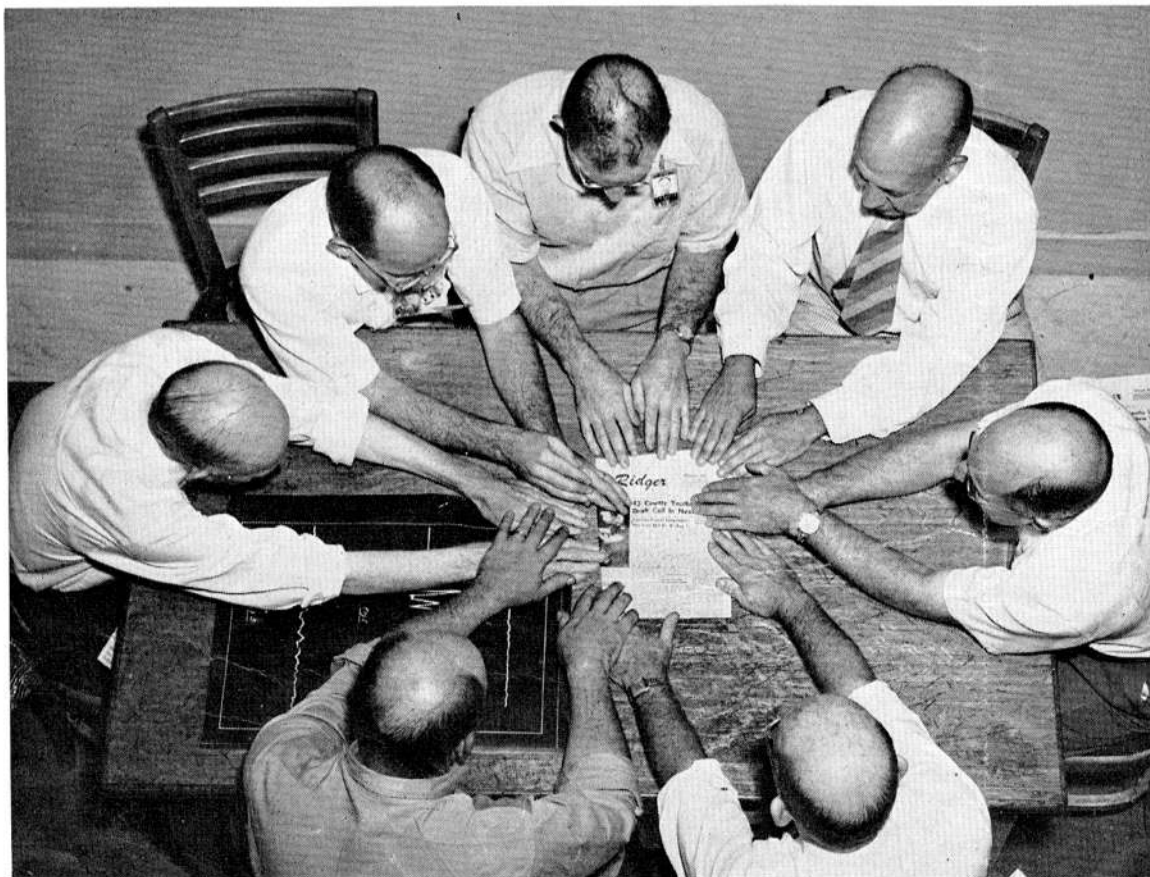
Miss Huddleston joins her brother, Lanny, already a senior at Tech. Her mother is counselor at Oliver Springs High School.

Congratulations also to Sharon Denham on her graduation from the Tennessee Memorial Research Center and Hospital School of Nursing.

Miss Denham is the daughter of Mr. and Mrs. Emory E. Denham, 4522 Nichols Dr., Knoxville. (Her father, an 18-year veteran is in Y-12's Research Services). She has been commissioned in the Air Force Nurses Corps and begins her tour of duty at Shepherd Air Force Base in Texas next month. Mrs. Denham is also a registered nurse and is employed at St. Mary's Memorial Hospital.



Sharon



**PATES OF THE PAST**—A group of Carbiders mildly protest the raising of the price of a haircut to \$1 in this area! Not that it bothered these men too much. Recognize any of these domes? The Time—about 22 years ago. The hair situation on the above Carbiders may have changed little—but we wonder what they would think of today's prices?

## Tee-Off Time Application For Kingston Golf Tournament

Kingston, Tenn.  
Saturday, July 24

Foursome

\_\_\_\_\_, Leader  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Leader's office phone \_\_\_\_\_

Home phone \_\_\_\_\_

Tee-off Time Preferred \_\_\_\_\_

Fill out completely and return to the Recreation Office, Building 9711-5. Deadline for entering is 4:30 p.m. Wednesday, July 21. Tee-off times will be drawn the next day, Thursday, July 22 at 8 a.m.



## MARATHON -- Joggers' Secret Goal?

By T. A. LINCOLN, M.D.

The popularity of jogging has increased at a fantastic rate over the past five years. Although few are able to condition themselves sufficiently to enter a marathon, many harbor a secret ambition of competing some day in this amazing race.

Marathon, located northeast of Athens, Greece, was the location of a great battle between the Greeks and Persians



Dr. Lincoln

in 490 B.C. Darius the Great had threatened to overrun Greece but was stopped here. Pheidippides, a Greek runner, ran the 26 mile, 385 yard distance to Athens and gasped to his leaders, "Rejoice! We conquer!" before he collapsed and died. To honor him the first marathon race in the modern Olympic games was run in 1896.

Evidence of the increasing popularity of jogging can be seen every evening on school tracks and streets throughout the country. If the above thesis that joggers

secretly aspire to run in a marathon is true, certainly a great increase in the number and participation in marathons should have occurred. Indeed it has! There are now over 100 marathons scheduled each year in this country and every weekend shorter races of 5, 10, 15, and 20 miles occur. Many are officially sanctioned by the Amateur Athletic Union and records of participants and times are kept.

### 63-Year-Old Competes

The number of participants in the Boston Marathon, the most prestigious American race, got so large, 1011 in 1970, that officials decided to establish entrance requirements. This year to qualify, a runner had to have participated in at least one other marathon and finished the race in 3½ hours or less (8 minutes per mile or 7.5 mph). A few were admitted who had completed somewhat shorter races in faster times. For example, completions of 20 miles in 2½ hours (7.5 min/mile; 8 mph) or 10 miles in 65 minutes (6.5 min/mi, about 9.25 mph) were allowed. Anyone who has done much jogging realizes that these are fast times and would eliminate 99 percent of casual joggers.

In spite of these requirements, 887 qualified and participated this year. The winner, Alvaro Mejia, a Colombian, ran the 26¼ miles in two hours 18 minutes, 45 seconds. Two hundred and forty runners finished under three hours. Sixty-three-year-old John Kelley completed his fortieth marathon in under four hours. He has won twice and finished second seven times.

### Why Do They Run?

The medical profession was abundantly represented in this year's, the seventy-fifth, marathon. The best time was reported by Dr. David Worthen, a 35-year-old ophthalmologist from Gainesville, Florida, who finished in 2:42:32 (eightieth place). Twenty physicians qualified under the Boston Athletic Association rules and 63 were allowed to participate under a special arrangement with the American Medical Joggers' Association. Twenty-one finished in 3½ hours or less. The top running medic over age 50 was Richard Steiner, pathologist from Long Beach, California, who finished in 2:51:50!

Why do people run? This question is as difficult to answer as why people play golf. As a result of a survey of middleaged joggers, Dorothy Harris of Penn State University attempted to characterize the typical jogger. She found that he usually had grown up in an urban area and had parents who had encouraged him to participate in sports. He had, on the average, more years of formal education than the general population and enjoyed competition and the feeling of fatigue following strenuous exercise. Physical activity had become a part of his life style and when opportunities to safely participate in group sports became limited, he turned to jogging. Such a description does not fit the so-called exercise "nut", an uncomplicated description often made by neighbors and friends.

### Still Vigorous, Strong

Not all runners came from active backgrounds. Some have led moderately sheltered lives where competitive athletics were avoided. With the confidence of maturity and a desire to compete against themselves rather than more richly

## Thomas—New Jaycee Leader

Jim Thomas, Y-12 Development Maintenance, is the new President of the Oak Ridge Jaycees.

Thomas and his wife Jean, the outgoing Jaycette President, live at 101 Orange Lane. His father, J. P. Thomas, is in Y-12's Electrical Department.

Other Union Carbide employees who are officers include: External Vice President Bob Presley, Y-12; State Director Earle Gourley, ORNL; Treasurer Jim Rollins, Y-12; Directors Emmett Walker, Bill Williams, Jack Hill, Y-12; Assistant Secretary Ed Crowder, and Assistant Treasurer Chuck Stevenson, Y-12.



**NEW JAYCEE OFFICERS**—New officers for the Oak Ridge Jaycees were installed recently. Shown here are some of the group's new leaders. Front row, from left, are Bob Presley, Earle Gourley, Bill Williams, and Jim Rollins. Back row, from left, are Jack Hill, Jim Thomas, and Emmett Walker.

## Atomique Scientists Visit Y-12 Complex

Pierre R. Lecorche and Henri Revol from Centre d'Etude Nucleaires, French Commissariat al 'Energie Atomique, Saclay, France, were recent visitors in the Y-12 Plant's Critical Experiments Facility.

They discussed nuclear criticality safety studies with representatives from Oak Ridge National Laboratory, Y-12, the Oak Ridge Gaseous Diffusion Plant and the Atomic Energy Commission. A film, produced in France, showing the behavior of super-critical solutions of enriched uranium, was seen.

Lecorche and Revol, along with three other authors, have reported research of importance to criticality safety, and an English version edited by the Y-12 Criticality Data Center, will be available soon.

Lecorche and Revol's visit was coordinated by A. D. Callihan, director of the Y-12 facility.

gifted peers, they turned to running where no great skill was required.

A tendency toward introspection and self-criticism is sometimes found in distance runners even when young. They have above average personal discipline. Sometimes a certain amount of masculine striving is present in middleaged joggers. The jogger wishes to reassure himself that he is still vigorous and strong. He finds his success at jogging reassuring. Some may be critical of such a need but is it not more desirable than the man who passively accepts a sedentary way of life and withdraws from physical challenge?

The psychological benefits from jogging may be as important as the physical. Romain Gary wrote in *Life* magazine that he ran to tire out his "inner boilings".

There are many medical benefits from jogging: weight control, increased pep, more endurance, fewer "nerve" problems, less coronary heart disease and increased body efficiency due to a better tuned "machine." Hazards include numerous musculoskeletal complaints, particularly in the joints, and rare heart attacks in inadequately pretested or preconditioned joggers.

Per-Olaf Astrand, famous Swedish exercise physiologist, is reported to have commented regarding the risks of jogging. "I think a medical certificate should be required for all people who do not plan to participate in regular vigorous exercise. They take a much greater life-long risk than those who do."

## SPORTS NOTES

### Y-12 and ORGDP

#### SOFTBALL NOTES

Five teams now stand aloft in the K-25 and Y-12 Softball Leagues . . . with only one loss each. The Gashouse Gang from K-25 fell on June 1, victims of the fury of the big Y-12 Eagles. The decision — 15 to 7, is the first loss for the Gang.

The Gang, plus the Rangers, Buccaneers, Colts and Eagles have all lost only one game, with competition getting tighter as the weather warms.

Plans for a "seeded" league for next summer with the best teams from the three plants opposing each other will be announced shortly.

### Y-12 GOLF NOTES

Bowers-Rowan claim a rather comfortable lead in the South Hills race among Y-12 tee-men. Parrott-Parker follow in second place, five points behind the leaders.

Coffee-Davenport and Mee-Wright are neck-to-neck in the race at Southwest Point as eight pair of golfers square off in the Kingston "by-the-lake" competition.

Among J-Shift golfers, it's still Pryor and Lard, eight points ahead of the pack.

## Green Turf Open Tournament Is Set

John Cornelius (Operations Division), president of the newly formed Green Turf Golf Association, announces that the first annual Green Turf Open Tournament will be held July 13 and 14 at Whittle Springs Golf Course in Knoxville. This will be a 36-hole medal play event.

There will be \$3,600 in prizes for professionals and merchandise awards for the top four finishers in four flights of amateur men. There will also be merchandise awards for the top four scores in two flights of senior division play for ladies and men.

Reservations and further information may be obtained from John Clark (tournament director) of the Inn Towner Motel, 211 Jesamine Street in Knoxville. Practice rounds may be played on July 12.

### ORNL NOTES

A softball team has to score a lot of runs to beat the Braves and Computers of the ORNL Softball League. At ND News deadline they were both undefeated but were to meet each other soon. From the Braves Jim Milligan, Ray Bolden and Sam Shell have put many of those hits and runs in the win column. From the Computers congratulate John Amburgy, Hollis Stakes, Ken Foust, Bob Allred and Arnold Beets.

### Cedar Hills Golf

Henry Tuck and John Cornelius scored a 77 tie in the May golf tournament at Cedar Hills.

All you anglers check the bulletin boards for rules concerning the third quarter fishing rodeo. Dates for the rodeo are July 1 through September 30.

### Shift Activities

Shifts "B", "C", and "D" each had fishing rodeos for their quarterly activity. In the Shift "B" activity winning fish were caught by W. F. Spencer, J. M. Dixon, G. M. Pearson, N. D. Browder, R. E. Potter, C. L. Francis and C. W. Carter. "C" Shift winning anglers were G. E. Davis, H. V. Klaus, J. C. Long, J. M. Guinn, R. R. Laxson, C. P. Baker, F. S. Adams and G. C. Davis. Bringing home winning fish from "D" Shift were L. A. Howard, Steve Howard, J. H. Greene, J. E. Eve, E. C. Fearnow and R. Thomas.

Roy Towns (Reactor Chemistry Division) is in Birmingham, Ala., this week playing in the Southern Senior 50 and Over Tennis Tournament. In mid-July he will be in Houston playing in the National Senior Invitational 45 and Over Tournament.

### ALL-CARBIDE NOTES

Attention summer employees, there is specially planned recreation for you — volleyball on Monday (7-9 p.m.) at Jefferson Tennis Courts and softball on Monday, Tuesday and Thursday (6:30-9:30 p.m.) at Carbide Park.

Oops team is really knocking down those pins in the Carbide Family Mixed League. They have 14½ wins with 1½ losses and are followed closely in league play by Hot Dogs.

In the fourth match of the Carbide High Power League Jack Huff of Y-12 took first place followed by George Reimann and Don Kiplinger both of ORNL.



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## Merriman To Speak On Krypton, Xenon

James R. Merriman, Gaseous Diffusion Development Division, ORGDP, will be the next speaker at the Nuclear Safety Program Seminar. The next seminar is set for 9:15 a.m., Thursday, July 15, in the 4500 East Auditorium at ORNL.



Merriman

His subject will be "Selective Absorption of Krypton and Xenon." Merriman holds a B.E. degree from Vanderbilt University, and an M.S. degree from The University of Tennessee. He is currently a part-time student at UT, and is section head in the Gaseous Diffusion Development Division. In his work, he is responsible for chemical engineering process development studies and experimental evaluation, mainly related to the gaseous diffusion process. He is chairman of the Knoxville-Oak Ridge Section of the American Institute of Chemical Engineers.

## Lind Memoirs Available From Academy of Science

Through the efforts of P. S. Rudolph and R. J. Raridon, ORNL Chemistry Division, the Tennessee Academy of Science has agreed to publish the memoirs of Dr. Samuel Colville Lind, consultant to the Chemistry Division at the time of his death in 1965. Rudolph, who worked with Lind, has written a preface to the memoirs. Raridon is currently President of the Academy.

Dr. Lind's memoirs, written in 1962, will constitute the regular quarterly issue of the Academy Journal for January 1972 (some 40 pages). He wrote about his youth, education, scientific studies, and his impressions of Oak Ridge, including many humorous incidents. A limited number of extra copies will be printed for non-members of TAS. These may be ordered by sending a check for \$2, payable to TAS, to the ORNL Chemistry Division Office. Dr. Lind was a native of McMinnville, Tenn.

## Enrichment Technology

(Continued from Page 1)

companies will be handled in such a way as to have minimum effect on the AEC's own on-going enriching program. The selection of companies to participate in the program will take into account the Commission's responsibility under the Atomic Energy Act to strengthen free competition in private enterprises.

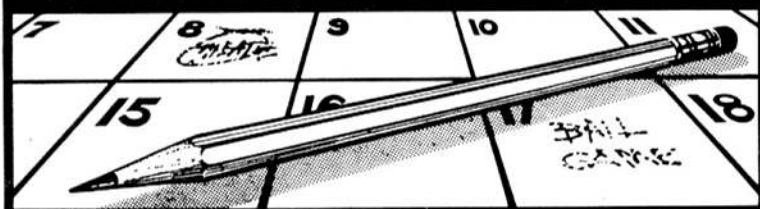
Uranium enrichment technology will continue to be classified, and access to it will be offered under specified terms in contracts with AEC. Such contracts will not provide for any AEC funding.

The Government is reserving the right to charge royalties for use of its technology in any subsequent production phase of this program which may be established.

Applications will be accepted up to September 1, 1971.

picnic will be at the Watts Bar cottage of Miriam Guthrie with a pot-luck supper at 5 p.m. and fireworks at dusk. For information, contact N. B. Gove at 483-5574 or H. S. Pomerance at 483-7945.

## CALENDAR OF EVENTS



### PADUCAH

Family Swimming: Every Saturday at Noble Park from 9 a.m. until 12 noon. Open to Carbiders and their families.

### July 19

Ladies Golf Leagues: Fourth week of play of a ten-week schedule. Other dates of play are July 26, and August 2, 9, 16, and 23. The annual dinner will be held on August 30.

### TECHNICAL

#### July 2

International Working Sessions on Fusion Reactor Technology (Summary Session): D. Steiner, Chairman. East Auditorium, Building 4500N, ORNL, 9 a.m.

ORNL-NSF Environmental Lunch Hour Films: "Pollution," songs by Tom Lehrer; "Beware the Wind," "On a Clear Day You Can Almost See Terminal Tower"; and "Runaround." Isotopes Auditorium, Building 3047, 12 noon.

Physics Division Seminar: "How to Make Ultrapure Niobium for Use in Accelerators," R. E. Reed, Solid State Division. Central Auditorium, Building 4500N, 3 p.m.

### July 6

Oak Ridge Associated Universities-Oak Ridge National Laboratory Summer Lecture Program: "Medical Ethics in Experimental Medicine," Gould A. Andrews. American Museum of Atomic Energy, Jefferson Circle, 8 p.m.

### July 9

Physics Division Seminar: "<sup>16</sup>O-Induced Reactions in the f-p Shell," G. C. Morrison, Argonne National Laboratory. East Auditorium, Building 4500N, 3 p.m.

### July 13

Oak Ridge Associated Universities-Oak Ridge National Laboratory Summer Lecture Program: "Science and Trans-Science," Alvin M. Weinberg. American Mu-

seum of Atomic Energy, Jefferson Circle, 8 p.m.

### July 14

Metals and Ceramics Division Seminar: "Fabrication and Characterization of Sol-Gel (U,Pu)O<sub>2</sub>," Ronnie A. Bradley. East Auditorium, Building 4500N, 2:30 p.m.

### July 15

Nuclear Safety Program Seminar: "Krypton and Xenon Absorption Studies," J. R. Merriman, ORGDP. East Auditorium, Building 4500N, 9:15 a.m.

### July 16

Reactor Division Seminar Series on Reactor Technology: "Safety Aspects of the Various Reactors," William B. Cottrell. Large Conference Room, Building 9204-1, Y-12 Plant, 3 p.m.

### July 20

Oak Ridge Associated Universities-Oak Ridge National Laboratory Summer Lecture Program: "Russian and American Experimental Physics," R. S. Livingston. American Museum of Atomic Energy, Jefferson Circle, 8 p.m.

## July 5 Holiday

**Monday, July 5, is an official holiday for all Nuclear Division employees of Union Carbide Corporation.**

**Only those whose presence is required by security or continuous operation will be required to be on the job. Since Independence Day falls on Sunday, tradition is that the following day shall be observed as a holiday.**

### OAK RIDGE COMMUNITY

On Saturday, July 3 the Oak Ridge Cosmopolitan Club will hold a picnic for foreign visitors to Oak Ridge and for the club's members and friends. The all-day



**JUMPING TOYS**—Friends of Richard A. "Dixie" Walker, former superintendent in Y-12, Oak Ridge and Paducah Gaseous Diffusion Plants, recently contributed a series of kiddy-jacks for the Clark Center Recreation Park. Above, children flock to the jumping toys for fun and excitement. In the top photograph are Russell Bell, son of Harold, ORGDP; and Nancy Dickert, daughter of Ron Dickert, Y-12. In the next photograph are twins David and Lisa Pappas, daughters of William S. Pappas, ORGDP. In the center between the twins is Ronnie Dickert, son of Ron. In the lower photo, from left are, Katrina and Gil Hubbard, daughters of Lincoln Hubbard, ORNL; and Sonya Hanrahan, daughter of Donald, Y-12; and Autumn Goforth, daughter of Leonard, ORAU, and Robbie Lanier, visiting his cousins in Oak Ridge. Mr. Walker began his career with Union Carbide in the early part of 1944. On a visit to the park once after his medical retirement, he expressed an interest in facilities for children. His friends decided this would be a fitting memorial for the genial Carbider.